

REMARKS

These remarks are responsive to the Office Action dated October 24, 2001.

Claims 9-16 are pending in the present Application. Claims 9-16 are rejected. Claim 9 has been amended for clarification. Claims 9-16 remain pending. For the reasons set forth more fully below, Applicant respectfully submits that the remaining claims are allowable. Consequently, reconsideration, allowance and passage to issue are respectfully requested.

The present invention comprises a system for forming a channel device. The system comprises means for providing an active region on a substrate wherein the active region comprises a plurality of discontinuous gate structures. The system further comprises means for providing an ion implantation in the substrate.

35 USC §102 Rejections

For ease of review, independent claim 9 is reproduced herein below:

9. A system for forming a channel device comprising:
- means for providing an active region on a substrate wherein the active region comprises a plurality of discontinuous gate structures; and
- means for providing an ion implantation in the substrate.

The Examiner states:

Claims 9, 10, 11, 13, 14, 15 and 16 are rejected under 35 USC 102(b) as being anticipated by Dennison et al. (US '854).

Dennison teaches a system forming a channel device comprising (see figures 1-5 and col. 2, line 15 to col. 5, line 25:

means for providing one active region comprises three gate structures 16, 20, 24 on a substrate 12; and

means for providing an ion implantation in the substrate, wherein means for providing the ion implantation further comprises means 38 for

masking the gate structure before the ion implantation and wherein the ion implantation further comprises a halo or pocket 44 implant and wherein the gate structures are inherently connected to gate voltage source.

Applicant respectfully disagrees with the Examiner's rejection. The recited invention is of claim 9 is directed toward a system for forming a channel device. The system comprises means for providing an active region on a substrate wherein the active region comprises a plurality of discontinuous gate structures. The system further comprises means for providing an ion implantation in the substrate.

Dennison discloses a method of forming CMOS integrated circuitry includes, providing a series of gate lines over a semiconductor substrate, a first gate line being positioned relative to an area of the substrate for formation of an NMOS transistor, a second gate line being positioned relative to an area of the substrate for formation of a PMOS transistor. The method further includes masking the second gate line and the PMOS substrate area while conducting a p-type halo ion implant into the NMOS substrate area adjacent the first gate line, the p-type halo ion implant being conducted at a first energy level to provide a p-type first impurity concentration at a first depth within the NMOS substrate area. Finally, in a common step, blanket ion implanting phosphorus into both the NMOS substrate area and the PMOS substrate area adjacent the first and the second gate lines to form both NMOS LDD regions and PMOS n-type halo regions, respectively, the phosphorus implant being conducted at a second energy level to provide an n-type second impurity concentration at a second depth within both the PMOS substrate area and the NMOS substrate area, the first energy level and the first depth being greater than the second energy level and the second depth, respectively.

The Examiner asserts that Dennison anticipates the present invention because it teaches a system for forming a channel device comprising means for provide one active region and three gate structures 16, 20, 24 on a substrate 12. (See Dennison, Figure 1, Attached Exhibit A.) Applicant disagrees with this assessment.

The present invention of claim 9 recites a single active region on a substrate wherein the single active region comprises a plurality of discontinuous gate structures. As can be clearly seen in Figure 1 of Dennison, the plurality of gate structures 16, 20 24 are on three different active regions **a, b, c.** (i.e. gate structure 16 is on active region **a**, gate structure 20 is on active region **b**, gate structure 24 is on active region **c**.) This is clearly different from the present invention wherein a plurality of discontinuous gate structures are on a single active region.

Consequently, since a plurality of discontinuous gate structures on a single active region is clearly different from a plurality of discontinuous gate structures wherein each gate structure is on separate active region, the recited invention of claim 9 is clearly different from the cited reference. Accordingly, claim 9 is allowable over the cited reference.

Since claims 10, 11, 13, 14, 15 and 16 are dependent on claims 9, the above-articulated arguments related to claim 9 apply with equal force to claims 10, 11, 13, 14, 15 and 16. Accordingly, claims 10, 11, 13, 14, 15 and 16 are allowable over the cited reference.

35 USC §103 Rejections

The Examiner states:

Claim 12 is rejected under 35 USC 103(a) as being unpatentable over Dennison et al. (US '854) as applied to claims 9, 10, 11, 13, 14, 15 and 16 above, and further in view of the following remarks.

Dennison teaches each of the three gate structures comprises a channel length and disposed at a distance apart, but fails to teach the range for the channel length and separated distance as recited in present claim 12.

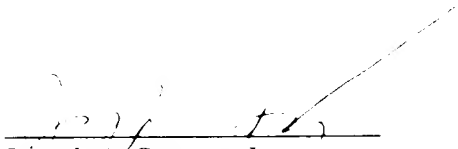
However, it would have been obvious to one of ordinary skill in the art of making semiconductor devices to determine the workable or optimal range for the channel length and separated distance through routine experimentation and optimization to obtain optimal or desired device performance.

Since claim 12 is dependent on claim 9, the above-articulated arguments related to claim 9 apply with equal force to claim 12. Accordingly, claim 12 is allowable over the cited reference.

Applicant believes that this application is in condition for allowance.

Accordingly, Applicant respectfully requests reconsideration, allowance and passage to issue of claims 9-16 as now presented. Should any unresolved issue remain, Examiner is invited to call Applicant's attorney at the telephone number indicated below.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Please amend the claims as follows:

9. (Amended) A system for forming a channel device comprising:
means for providing an [at least one] active region on a substrate wherein the
active region comprises a plurality of discontinuous gate structures; and
means for providing an ion implantation in the substrate.